Claims

1. A method of formatting data for transmission over a satellite link, the method comprising:

receiving data and outputting said data in a format comprising one or more frames of constant length, each said frame having a frame header and comprising a plurality of data blocks of constant length each separated by a predetermined pilot signal, wherein a data block ratio of the length of each said data block to said pilot signal is selected from a group comprising the numbers 25 and 29.

2. A method as claimed in claim 1, wherein each said frame further comprises a short block, wherein a short block ratio of the length of the short block to that of the pilot signal is selected from a group comprising the numbers 17 and 8 corresponding to the data block ratio of 25 and 29 respectively.

3. A method as claimed in claim 1 or 2, wherein the pilot signal comprises a single modulation symbol and the blocks each comprise a number of modulation symbols determined by said corresponding ratio.

4. A method as claimed in claim 3, wherein the symbols are transmitted at a rate of 8 or 16 ksymbol/s, with said data block ratio of 25, or at a rate of 33.6 ksymbol/s, with said data block ratio of 29.

5. A method as claimed in any preceding claim, including transmitting said output data at L-band.

6. A method of formatting data for transmission over a satellite link, the method comprising:

receiving user data from a user terminal;

receiving signalling data relating to the status of a call over the satellite link; and

in a data mode, outputting the user data and the signalling data in a format comprising a plurality of data frames each comprising a data portion derived from said user data and a first signalling portion derived from said signalling data; and

in a signalling mode, outputting the signalling data in a format comprising a plurality of signalling frames each comprising a second signalling portion derived from said signalling data and a dummy portion not derived from said user data or from said signalling data; the method further comprising, in both said modes, error correction coding said output data at a predetermined coding rate; wherein said coding rate in said data mode is equal to that in said signalling mode.

7. A method as claimed in claim 6, wherein the length of said first signalling portion is 48 bits.

8. A method as claimed in claim 7 or 8, wherein the length of said data portion is selected from a group comprising 1184 bits and 2560 bits.

9. A method as claimed in any one of claims 6 to 8, wherein said second signalling portion comprises one or two blocks of 96 bits.

10. A method of formatting data for transmission over a satellite link, the method comprising:

receiving user data from a user terminal in a format comprising user data frames each comprising four subframes of equal length;

and outputting the user data in a format comprising a plurality of output data frames, each comprising the data content of an integral number of said user data frames.

11. A method as claimed in claim 10, wherein each of said subframes has a user data content of 144 bits.

12. A method as claimed in claim 10, wherein each of said subframes has a user data content of 288 bits.

13. A method as claimed in any one of claims 10 to 12, wherein said user data comprises facsimile data.

14. A method as claimed in any one of claims 10 to 12, wherein said user data comprises video data.

15. A method as claimed in any one of claims 6 to 14, further comprising forward error correction encoding said output data to generate encoded data.

16. A method as claimed in claim 15, wherein said encoding step comprises Turbo encoding said output data.

17. A method as claimed in claim 15 or 16, further comprising modulating said encoded data and transmitting said encoded data to the satellite.

18. A method as claimed in claim 17, where said modulating step uses 16QAM modulation.

19. A satellite communications system comprising a plurality of user terminals and at least one earth station, each of said user terminals being arranged to communicate with said at least one earth station via at least one satellite, wherein the system is arranged so that said user terminals and/or said earth station are able to receive data at any one of a set of input data rates and to transmit said user data at a corresponding one of a set of output data rates, wherein the ratio between one of said input data rates and the corresponding one of said output data rates differs from one of said input data rates to another one of said input data rates, such that the ratio between each of said input data rates and the lowest common multiple of said set of input data rates is less than the ratio between each of said output data rates and the lowest common multiple of said set of output data rates.

20. A system as claimed in claim 19, wherein said set of output data rates comprises 8, 16 and 33.6 ksymbol/s.

21. A system as claimed in claim 19 or 20, wherein said set of input data rates comprises 14.4, 28.8 and 64 kbit/s.

22. A system as claimed in claim 21, wherein said set of input data rates further includes 56 kbit/s.

23. A method of transmitting data via satellite to a receiving terminal, the method comprising:

transmitting the data in a format comprising a plurality of SCPC frames each comprising a sequence of 16 QAM symbols, the sequence comprising a predetermined synchronization sequence of 40 symbols, a series of data fields of 25 or 29 symbols each followed by a single pilot symbol, and

a final data field of 17 or 8 symbols respectively with said data fields of 25 or 29 symbols.

24. A signal comprising a frequency carrier modulated by a sequence of 16 QAM symbols arranged as a plurality of frames, each frame comprising a predetermined synchronization sequence of 40 symbols, a series of data fields of 25 or 29 symbols each followed by a single pilot symbol, and a final data field of 17 or 8 symbols respectively with said data fields of 25 or 29 symbols.

25. Apparatus arranged to carry out the method of any one of claims 1 to 18 and 23.

26. A method of transmitting a data burst via satellite to a receiving terminal, comprising:

transmitting the data burst in a format comprising a sequence of data modulation symbols having a variable power level among the symbols, said sequence being preceded by a sequence of preamble modulation symbols having a constant power level.

27. A method as claimed in claim 25, wherein the power level of said preamble modulation symbols is approximately equal to the average power level of said sequence of data modulation symbols.

28. A data burst signal comprising a frequency carrier modulated by comprising a sequence of data modulation symbols having a variable power level among the symbols, said sequence being preceded by a sequence of preamble modulation symbols having a constant power level.

29. A method substantially as herein described with reference to the accompanying drawings.

30. Apparatus substantially as herein described with reference to the accompanying drawings.

31. A signal substantially as herein described with reference to the accompanying drawings.